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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/600,888	08/15/2000	Kingo Suzuki	P107242-0000	4637

7590

04/09/2003

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EXAMINER

TRINH, HOA B

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 04/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/600,888

Applicant(s)

SUZUKI ET AL.

Examiner

Vikki H Trinh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

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DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I in Paper No. 10 is acknowledged. The traversal is on the ground(s) that the subject matter of Group II can be searched with the subject matter of Group I. The examiner has reconsidered and found applicant's remarks persuasive.

Therefore, the requirement is withdrawn.

This Office Action examines all of the claims 7-13 in the present application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 7-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Nippon Mining Co (JP 4-250674, applicant's cited abstract)

Nippon Mining Co discloses, with respect to claim 7, a light emitting diode comprising a pellet/layer with a GaAsP mixed crystal, wherein the surface, (the examiner notes that the surface may be a major front surface or side surface depending on one's view focusing on the GaAsP layer), is etched, thereby inherently forming a certain roughness to a surface. See abstract.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nippon Mining Co, as applied to claim 7 above, in view of JP (4-116162).

Nippon Mining Co discloses an LED substantially as claimed in claim 7.

However, Nippon Mining Co does not explicitly state that the side surfaces of the pellet are rough with specific range.

JP (4-116162) shows an LED having a rough side surface 7. See abstract.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the roughening surface of Nippon Mining Co to include the side surfaces, as taught by JP (4-116162), so as to increase the surface area.

With respect to claims 9-10, the combined teaching of Nippon Mining Co and JP (4-116162) does not explicitly state that the side surfaces of the pellet are rough with a specific range.

Nevertheless, it would have been obvious to one skilled in the art at the time the invention was made to provide a specific range for the rough surfaces, since it is prima facie

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obvious to an artisan's experimentation and optimization because applicant has not yet established any criticality for the specific range.

Note that the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising therefrom. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. (In re Woodruff, 919 F.2d 1575, 1578 (Fed. Cir. 1990).)

7. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nippon Mining Co in view of Nishiwaki et al. (59085868).

Nippon Mining Co disclose a light emitting diode comprising a pellet/layer having a surface including a major front surface of which is made of a GaAsP mixed crystal, characterized in that the major front surface is a rough surface. An etching agent, a nitric acid, is used to treat the rough surface. See abstract.

However, Nippon Mining Co does not explicitly teach a etching solution with Br₂ or I₂.

Nishiwaki et al. (59085868) teaching an etching agent using an etching agent such as an aqueous solution containing Br₂ or I₂. See abstract.

Therefore, as to claims 11-12, it would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Nippon Mining Co with an aqueous solution containing Br₂ or I₂, as taught by Nishiwaki et al. (59085868), so as to form fine projections on the major front surface of the pellet.

8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nippon Mining Co in view of Nishiwaki et al. (59085868), and further in view of Kinoshita et al. (5,173,130).

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Nippon Mining Co in view of Nishiwaki et al. (59085868) teaches the invention substantially as claimed in claim 11. However, Nippon Mining Co does not explicitly specify the concentration range of the compounds in the etching solution.

Kinoshita et al. (5,173,130) teaches an etching solution including nitric acid, phosphoric acid, and acetic acid. See col 3, lines 58-68, col 4, lines 1-2.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the etching solution of Nippon Mining Co with the etching solution, as taught by Kinoshita et al. (5,173,130), so as to stabilize the Ph value of the etching solution. See Kinoshita et al. (5,173,130), col 4, lines 48-51.

With respect to the specific concentration range of the nitric acid, phosphoric acid, and acetic acid in the etching solution, it would have been obvious to one skilled in the art at the time the invention was made to provide a specific range of concentration, since it is prima facie obvious to an artisan's experimentation and optimization because applicant has not yet established any criticality for the specific range.

Note that the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising therefrom. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. (In re Woodruff, 919 F.2d 1575, 1578 (Fed. Cir. 1990).)

Allowable Subject Matter

9. Upon further consideration, the examiner withdraws the indication of allowable subject matter in the previous office action.

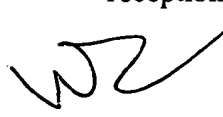
Response to Arguments


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10. Applicant's arguments with respect to claims 7-13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

1. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Vikki Trinh whose telephone number is (703) 308-8238. The Examiner can normally be reached Mon-Tuesday, Thurs-Friday, 7:30 AM - 6:00 PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Wael Fahmy, can be reached at (703) 308-4918. General inquiries relating to the status of this application should be directed to the Group receptionist at (703) 308-0858. The fax number is (703) 308-2708.


Vikki Trinh,
Patent Examiner
AU 2814


LONG PHAM
PRIMARY EXAMINER